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(54) **Nouveau procédé de conditionnement des produits pharmaceutiques.**

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Translation of Patent

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New procedure for packaging of pharmeceutical products.

This invention is a new procedure for packaging pharmaceutical products, affording easier measurement of the dosage of the product in relation to physical characteristics of the individual for whom the product is intended. This packaging technique is particularly suitable for pharmaceutical products for use in pediatric medicine.

It is well known that determination of the correct dosage for various uses is an important issue in medical science and particularly in the case of very sensitive individuals such as children. A child's development may vary considerably from one individual to another, notwithstanding that their age is the same and this fact, in many cases, makes inaccurate those dosage systems which are based on the age of the individual. Moreover, pharmaceutical laboratories offer ready-to-use medications whose active ingredients are available in a wide variety of concentrations with the result that physicians have a difficult time remembering the wide variety of medications available.

The object of this invention is a packaging system which solves these difficulties.

This system is characterized by the fact that the medication to be used, orally or by injection, is bottled in concentrated form in a flask or container which is marked with calibrations or gradations which permit dilution of the medication so as to obtain a dilution of the active ingredient which will correspond to the weight or body surface area of the individual.

The dilution of the medication to the concentration required by the individual's weight can be accomplished with any liquid such as water or a solvent or dilutant and the said liquid can moreover be delivered at the same time as the concentrated medication sold in the patented container.

One could also deliver the patented container separately from the concentrated medication, which would be contained in a separate package or container.

The calibrations on the patented bottle or flask are a function of the relationship between the dosage and body weight. In certain cases, there will be a simple proportionality between the scale on the bottle and human weight; in other cases, however, the dosage/weight ratio may not be consistent, such as when the optimal dosage of the medication increases at a disproportionately faster rate than increases in body weight or, conversely, when increases in the dosage rise more slowly than increases in body weight.

Moreover, it is possible, with this invention, to provide for several calibrated scales on a single bottle. For

example, two scales with one corresponding to a strong dosage of the medication and the other corresponding to a milder dosage.

Medications which can be dispensed through the patented invention are numerous. One can cite as example the following: antibiotics, antipyretics, antiflammatory medications, vermifuge (?) medications, neurotropes, etc.

The patented system offers considerable advantages of which the principle ones are:

Extremely easy adaptation of dosage to an individual's constitution;

Considerable simplification for the physician of dosage requirements since the physician will know that a medication dispensed by the patented system can be prescribed according to one unvarying dosage, regardless of the weight or body surface area of the individual.

The following non-limitative examples illustrate the invention, and flasks or bottles in accordance with the invention are depicted in figures 1 and 2; figure 1 represents a bottle of "piperazine" (?) syrup with the gradations calibrated in a complex relationship to body weight; figure 2 represents a bottle of tetracycline with the gradations in linear relationship to body weight.

Example 1 (figure 1) - Piperazine syrup is to be used in the patented bottle; it is known that the optimal daily dosage is around 75 mg per kilo of weight for a young child and 50 mg per kilo for an older child. Therefore, a cylindrical bottle 6 cm in diameter is used, such as the one shown in figure 1. This bottle includes gradations which correspond to the dilutions to be used for children whose weight varies between 5 and 30 kg.

Initially, such a bottle would contain 70 ml of a solution of piperazine citrate at 15% piperazine hydrate (?). The user then adds to the bottle an amount of water sufficient to reach the gradation which corresponds to his weight. At this point, the medication is ready for use and the user should take three daily doses of 3.33 ml, regardless of his age or weight.

Example 2 (figure 2) - In this example, tetracycline chlorohydrate has been bottled in a cylindrical flask 6 cm in diameter. The optimal dosage for this medication is proportional to weight and the gradations corresponding to weight are indicated on the bottle, as shown in figure 2.

Initially, the bottle contains 1.2 grams of tetracycline chlorohydrate in powder form and then, according to his weight,

the patient will add a solvent up to the gradation which corresponds to his weight.

The medicinal dosage prepared in this manner will be identical for all subjects, regardless of weight or age; it will always be three doses of 5 ml per day.

As has been described above, a very large number of medications can be packaged in this manner and as further example one may cite:

Amplicilline (?) bottled in the flask with gradations which relate the dosage to the patient's weight in a complex (non-linear) ratio;

An injectable medication such as "propranolol", which may be bottled in a flask whose gradations relate the dosage in a proportional (linear) ratio to the patient's weight;

Potassium, to be taken orally, in the form of potassium gluconate could, as further example, be bottled in the patented flask.

APPLICANT'S PATENT CLAIM

A packaging or dispensing system for pharmaceutical products characterized by the fact that the medication to be used is packaged or bottled in concentrated form in a flask or other container which features gradations which permit dilution of the medication before its use so as to obtain a diluted form of the medication wherein the concentration of the active ingredient corresponds to the weight or body surface area of the patient.

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Fig. 1